

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of claims:

Claims 1-23 (canceled).

24. (new) An analytical system comprising:

a substrate including

(1) a central reservoir region,

(2) a plurality of electrophoretic channels in fluid communication with, and emanating substantially radially from, the central reservoir region, the channels being coplanar with each other, and each channel having (i) a proximal end which is linked to the central reservoir region, and (ii) a distal end, and

(3) for each channel one or more chambers that are each linked by a passageway in fluid communication with the distal end of that channel,

wherein each passageway leads from each chamber in a direction that is initially away from the central reservoir region;

a mechanism for rotating the substrate about a central axis of rotation that is perpendicular to the plane of the channels; and

a plurality of electrodes for applying a voltage potential between the one or more chambers and the central reservoir.

25. (new) The analytical system of claim 24, whereby centrifugation of the substrate about the central axis is effective to disperse liquid from the central reservoir region into the channels and the one or more chambers such that any air bubbles in the one or more chambers, the channels, and the passageways are forced towards the axis of rotation, when such liquid is present in the central reservoir region.

26. (new) The analytical system of claim 24, further comprising a contact card adapted to supply separate electrical voltages to the electrodes.

27. (new) The analytical system of claim 24, further comprising:
conductive concentric rings in electrical contact with the electrodes; and
conductive brushes which remain in contact with the concentric rings, when the substrate is rotated.

28. (new) The analytical system of claim 24, further comprising a voltage source adapted to independently control each of the plurality of electrodes.

29. (new) The analytical system of claim 24, further comprising a detector for detecting selected components which may be present in one or more of the channels.

30. (new) The analytical system of claim 29, wherein the mechanism for rotating the substrate about the central axis is adapted to sequentially pass the channels by the detector, for detecting one or more components that may be present in the channels.

31. (new) The analytical system of claim 24, wherein said chambers are defined in part by an annular septum that covers the chambers and permits needle-access to the chambers for delivery of liquid to the chambers.

32. (new) The analytical system of claim 24, wherein said chambers are defined in part by an annular septum that is porous to air, such that displaced air escapes through the annular cover when liquid is loaded into the channels.

33. (new) The analytical system of claim 24, wherein at least one of the channels contains an electrophoresis medium.

34. (new) The analytical system of claim 24, wherein the channels have cross-sectional diameters between 1 μm and 100 μm .

35. (new) The analytical system of claim 24, further comprising a temperature controller adapted to selectively heat or cool on or more surfaces of the substrate.

36. (new) The analytical system of claim 35, wherein the temperature controller is adapted to heat the one or more chambers of each channel.

37. (new) The analytical system of claim 24, wherein the substrate comprises a material comprising at least one of copper, aluminum, glass, silica-based glass, quartz, and polycarbonate.

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38. (new) The analytical system of claim 24, wherein the substrate further comprises electrical resistive traces in thermal contact with the one or more chambers of each channel.

39. (new) The analytical system of claim 24, wherein the mechanism comprises a motor shaft to rotate the substrate, and wherein the motor shaft is electrically grounded and adapted to be in communication with a liquid disposed in the central reservoir region.